REMARKS

The rejection of the claims 17-20 and 37-44 in view of EP109060, Glockner and Cosyns is respectfully traversed for reasons pointed out in applicants' previous response. There is simply no basis in the prior art references to combine the teachings of EP '060 and Glockner or Cosyns. Further, as noted in applicants' previous response, even if one of ordinary skill in the art after reading applicants' disclosure would attempt to combine the reference teachings, the result would be to target a diene content of 1 wt.%.[1] It is further noted that the final rejection acknowledges that the secondary references fail to disclose a maximum diene concentration of 0.1 wt.%. To the extent that the calculations at the bottom of page 5 of the final rejection depart from this acknowledgement in an attempt to show a diene concentration of 0.1 wt.%, applicants would respectfully submit that the mathematical analysis presented there is incorrect and simply ignores what is actually disclosed in Glockner. Glockner, in Table 2, reports on test runs carried out employing a feedstock of 60 vol.% isoprene and 40 vol.% normal hexane. The conversion figure which the Examiner selected in his mathematical calculation would result in a diene content well above the 0.1 wt.% level specified in applicant's claims. In this respect, it is noted that the mathematical treatment found at the bottom of page 5 ignores the fact of the diene content (60 vol.%) as well as the selectivity of 90.2%. It is evident that the diene content actually arrived at in the effluent at ten hours on stream would be approximately 6.15%, arrived at by calculating the amount of isoprene actually converted.[2] Further, even if the selectivity

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[1] In regard to the statement made in the final rejection regarding anticipation under 35 U.S.C. 102(b), it is noted that there is clearly no issue of anticipation here. This seems to be acknowledged in the final rejection where it is specifically pointed out that claim limitations are not found in any individual reference.

[2] 60% - 60% x 0.995 x 0.902 = 60% - 53.85% = 6.15%

corresponding to the 99.5% conversion were 100% instead of the actual reported value of 90.2%, the remaining diene content would still be well in excess of 0.1 wt.%.

It should not be inferred from the foregoing that applicants accept the rationale put forth in the Final Rejection to support the proposed combination of EP '060 and Glockner. The point is, however, that even if one follows exactly the Examiner's rationale purporting to show a low diene content in Glockner, the result is a diene content well in excess of the 0.1% level called for in applicants' claims.

With respect to the comments found on page 8 of the Final Rejection relative to claims 37, 43 and 44, applicants would respectfully submit that the assumption made in these calculations (that the product would necessarily contain 22.7 g of isobutene per 100 g of reactant) is unwarranted in view of the disclosure actually contained in Table 4. It would appear that the conversion figure of 77.3 in Table 4 of Colombo is stated with respect to the product components for which the selectivity values are presented. No figures are given for the product yield of isobutene and there is no basis in Colombo to assume 22.7 g of isobutene passed through the reactor without change. In fact, the isobutene employed in Example 25 of Colombo could well contain butadiene, since 1,3-butadiene has a boiling point of about –4.4° C, very close to the –6.9° C boiling point of isobutene. In this regard, it is noted that isobutene is derived by the fractionation of refinery gases (See the attached page 652 from Hawley's Condensed Chemical Dictionary, 12th Ed.) and the close proximity in boiling points of 1,3-butadiene and isobutylene could well result in the isobutylene fraction also containing butadiene. However, even assuming that the calculations presented on page 8 of the Office Action are fairly based, it will be noted that the olefin content of the feedstock and the effluent still would not be within ± 10 wt.% of each other as set forth in claim 44. To the extent the observations and calculations presented on

page 8 of the Office Action are intended to show lack of patentability of claim 37, it will be noted that this claim calls for a space velocity, LHSV, of from 10 to 30 hrs^{-1}. Example 25, relied upon in the analysis set forth in page 8 of the Office Action, specifies that the space velocity is well below the range called for in claim 37.

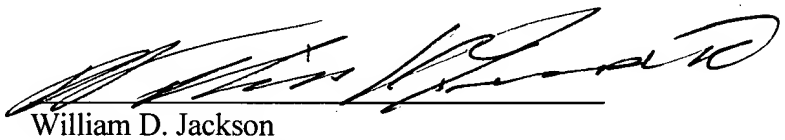
The patent to Cosyns is directed to the selective hydrogenation of a $C_2 - C_3$ hydrocarbon fraction. The Colombo reference is directed to the conversion of C_{4+} hydrocarbons, and thus there would be no reason for one of ordinary skill in the art to look to Cosyns, which involves the hydrogenation of hydrocarbons of lower molecular weight than those employed in Colombo. Further, even if the teachings of Colombo and Cosyns were to be combined, the result would be a diene concentration well in excess of the 0.1 wt.% value called for in applicants' claim 37. In this regard, Cosyns, in column 1, lines 32-38, makes reference to a steam cracking charge containing 1-2% propadiene.

The comments made in the Final Rejection based upon the holding of *in re McLaughlin,* 443 F2d 1392, 170 USPQ 209 (CCPA 1971) have been carefully considered. However, the McLaughlin case which led to the conclusion of a *prima facie* case of obviousness, in view of what the reference disclosures would suggest to one of ordinary skill in the art, does not countenance hindsight reconstruction of the prior art of the type condemned in the decisions cited in applicants' previous response. As noted there, the various processes disclosed in Colombo, Glockner and Cosyns are so diverse and unrelated that the attempt to combine their teachings is based not on knowledge which was within the level of one of ordinary skill in the art, but on applicants' own disclosure. Further, as noted above and in applicants' previous response, the combined teachings of the references fall short of applicants' claimed subject matter.

For the reasons advanced above and in applicants' previous response, it is respectfully submitted that the claims herein are patentable over Colombo in view of the secondary references and accordingly, an early reconsideration and allowance of this application is respectfully requested.

The Commissioner is authorized to charge any fee required in connection with the submission of this document to the Locke Liddell & Sapp LLP deposit account no. 12-1781.

Respectfully submitted,



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